OCZ
2.5inch SATA2 SSD
(Solid State Drive)

Datasheet rev.A01

OCZ Technology Group Inc.
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1. General Description

OCZ Core Series 2.5" SSD (Solid State Drive) is based on standard Serial ATA interface. It uses highly reliable NAND Flash chips with a capacities up to 128GB. Perfect for notebooks, the Core Series is ideal for energy-efficient mobile computing to extend battery life, increase access time, and provide a durable alternative to conventional hard disc drives with superior shock resistance.

2. Features

- Supports 1.5/3.0Gbps SATA I/II interface
- Fully compliant with Serial ATA International Organization: Serial ATA Revision 2.6
- Fully compliant with ATA/ATAPI-7 Standard
- Capacity:
    2.5inch: 32GB / 64GB / 128GB
- Performance

Intel® Core™ 2 Duo E6300 1.86GHz, South Bridge: NVIDIA® 680i, 2GB DDR2 800MHz (5-5-5-12)

OS: Windows XP Pro SP2   M/B: EVGA

ATTO Disk Bench		
Model P/N	READ (MB/s)	WRITE (MB/s)
OCZSSD2-1C32G	144.839	92.044
OCZSSD2-1C64G	132.888	89.587
OCZSSD2-1C128G	120.41	86.642

HD Bench 3.40 beta6	File Size: 100MB			
Model P/N	Read (MB/s)	Write (MB/s)	R. Read (MB/s)	R. Write (MB/s)
OCZSSD2-1C32G	139.319	88.504	84.979	18.354
OCZSSD2-1C64G	128.32	86.195	78.89	17.567
OCZSSD2-1C128G	114.798	82.914	71.96	17.952

- High Reliability based on the internal BCH 10bit ECC
- Supports SMART (Self-Monitor Analysis and Reporting Technology)
- Data integrity under power-cycling
- MTBF > 1,500,000 Hours
- Shock
    - i. Operating: 1,500G. Duration 0.5ms, half sine wave
    - ii. Vibration: 20G. Peak, 10 ~ 20KHz with 3 axis
- Humidity: 0C ~ 55ºC / 95% RH, 10 cycles
- Temperature
    - i. Operating Temperature: -10ºC ~ +70ºC
    - ii. Storage Temperature: -55ºC ~ +140ºC
- Altitude: Low Altitude Limit: -1000 ft   High Altitude Limit: 40,000 ft
- Fully compliant with RoHS directive
- CE and FCC compatibility

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3. Pin Assignment and Description

	No.		Plug Connector pin definition
	S1	GND	2nd mate
	S2	A+	Differential signal A from PHY
	S3	A-	
Signal	S4	GND	2nd mate
	S5	B-	Differential signal B from PHY
	S6	B+	
	S7	GND	2nd mate
Key and spacing separate signal and power segments			
	P1	V33	3.3V power (Unused)
	P2	V33	3.3V power (Unused)
	P3	V33	3.3V power, pre-charge, 2nd mate (Unused)
	P4	GND	1st mate
	P5	GND	2nd mate
	P6	GND	2nd mate
	P7	V5	5V power, pre-charge, 2nd mate
Power	P8	V5	5V power
	P9	V5	5V power
	P10	GND	2nd mate
	P11	DAS/DSS	Device Activity Signal / Disable Staggered Spinup
	P12	GND	1st mate
	P13	V12	12V power, pre-charge, 2nd mate (Unused)
	P14	V12	12V power (Unused)
	P15	V12	12V power (Unused)

4. Electrical Specification

- **Absolute Maximum Rating**

Parameter	Symbol	Condition	Min	Max	Unit
Analog Power Supply	AVDDH		-0.5	6	V
Digital I/O Power Supply	DVDD		-0.5	6	V
Digital I/O Input Voltage	$V_{I(D)}$		-0.4	DVDD + 0.4	V
Storage Temperature	$T_{storage}$		-55	140	℃

- **Recommended Power Supply Operation Conditions**

Parameter	Symbol	Condition	Min	Typical	Max	Unit
Operation Digital Power Supply	DVDD		3	3.3	3.6	V
Operation Analog Power Supply	AVDDH		3	3.3	3.6	V
Ambient Operation Temperature	TA		-10		70	℃
Junction Temperature	TJ		-10		125	℃

- **Recommended External Clock Source Conditions**

Parameter	Symbol	Condition	Min	Typical	Max	Unit
External Reference Clock				30		MHz
Clock Duty Cycle			45	50	55	%

- **Power Supply DC Characteristics (IDLE)**

Parameter	Symbol	Condition	Min	Typical	Max	Unit
Digital I/O Power Supply	I_{DVDD}	3.3V		9		mA
Internal Digital Power Supply	I_{DDH_VR}	1.8V		88		mA
SATA Analog Power Supply	I_{AVDDH_SATA}	3.3V		41		mA
SATA Analog Power Supply	I_{AVDDH_SATA}	1.8V		87		mA

- **I/O DC Characteristics**

Parameter	Symbol	Condition	Min	Typical	Max	Unit
Input Low Voltage	V_{IL}				0.8	V
Input High Voltage	V_{IH}		2.0			V
Output Low Voltage	V_{OL}		0		0.4	V
Output High Voltage	V_{OH}		2.6		3.6	V

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5. Physical Dimensions (99.88mm x 69.63mm x 9.3mm) – mini USB PORT is optional.
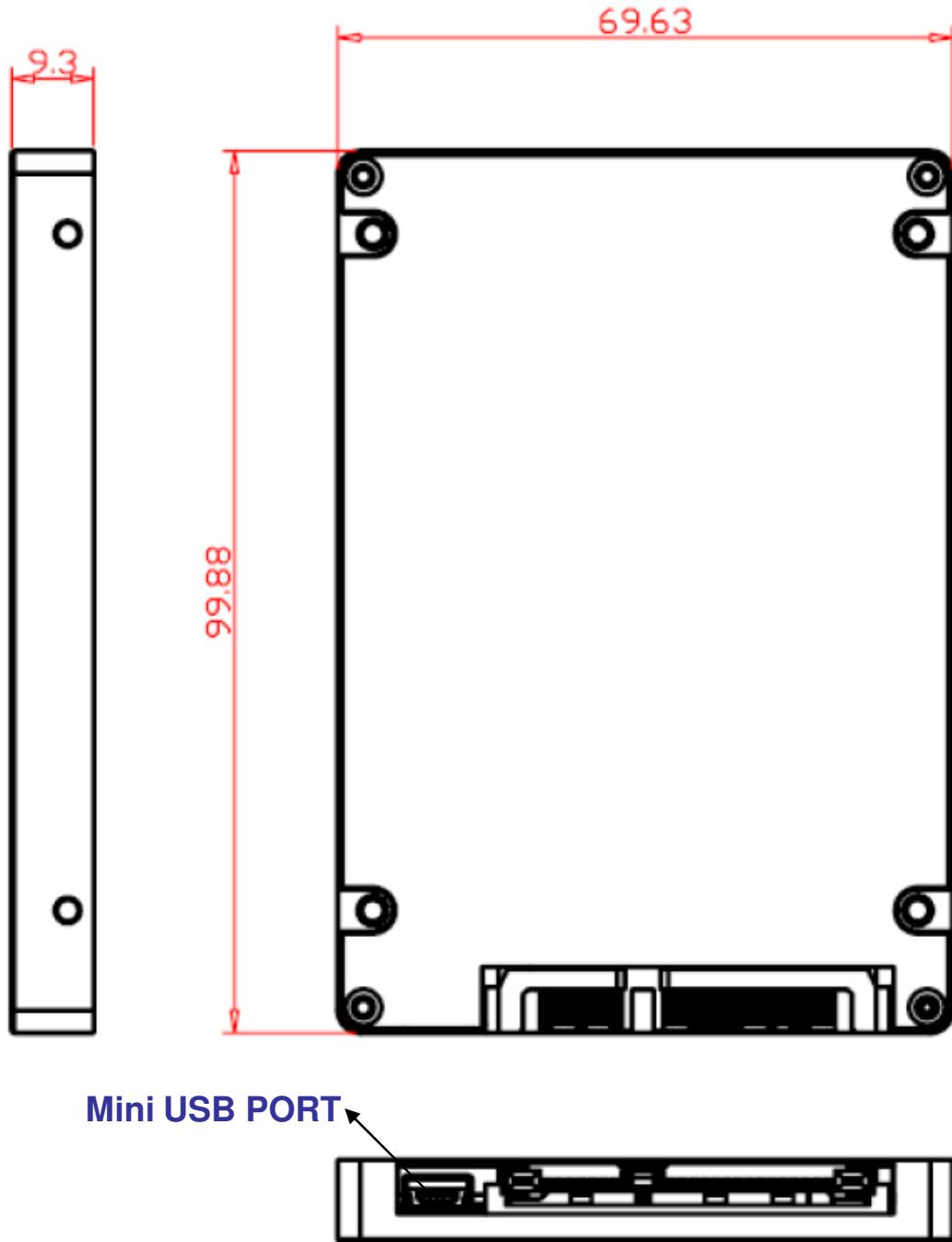
Mini USB PORT

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6. Performance Testing Result

- **TEST Platform:**
    - **Intel® Core™ 2 Duo E6300 1.86GHz,**
    - **South Bridge: NVIDIA® 680i**
    - **Main Memory Size 2GB DDR2 800MHz (5-5-5-12)**
    - **OS: XP Pro SP2**
    - **M/B: EVGA nForce® 680i-SLI™**

- **No RAID**

ATTO Disk Bench		
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HD Bench 3.40 beta6	File Size: 100MB			
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IO METER IOPs				
Test Size	**READ 4KB**	**WRITE 4KB**	**READ 32KB**	**WRITE 32KB**
OCZSSD2-1C32G	2742	513	1875	544
OCZSSD2-1C64G	2499	493	1503	509
OCZSSD2-1C128G	2311	470	1577	510

- **RAID0 (x2) - RAID configuration, you must have the bundled diskette from the mother board manufacturer or OEM manufacturer.**

ATTO Disk Bench	RAID0 (x2)	
Model P/N	**READ (MB/s)**	**WRITE (MB/s)**
OCZSSD2-1C64G	229.712	166.523
OCZSSD2-1C128G	240.861	174.416

HD Bench 3.40 beta6	RAID0 (x2), File Size: 100MB			
Model P/N	**Read (MB/s)**	**Write (MB/s)**	**R. Read (MB/s)**	**R. Write (MB/s)**
OCZSSD2-1C64G	218.336	152.154	90.941	18.882
OCZSSD2-1C128G	229.854	163.578	94.902	19.441

IO METER IOPs	RAID0 (x2)			
Test Size	**READ 4KB**	**WRITE 4KB**	**READ 32KB**	**WRITE 32KB**
OCZSSD2-1C64G	2492	497	2181	491
OCZSSD2-1C128G	2218	509	1923	497

7. Revision History:

Revision	History	Date	Memo
A01	First Release	7/15/2008	

8. Contact:

- Please contact OCZ website for the updated SPECSHEET.
    - http://www.ocztechnology.com

- Please contact OCZ Tech Support Team for further questions.
    - http://www.ocztechnology.com/NewTicket.html

9. Technical/ Performance Notes

- RAID support: Please refer to the original manufacturer's manual or bundled diskette. Raid support for Solid State Disks is not mature and may require specific driver installation, please view our resource guide should you have an issue
- SSD performance may vary slightly based on chipset and OS
- AHCI mode should not be used while installing windows with Intel chipsets due to known conflicts during installation which may slow or corrupt installation; installation is best handled in IDE mode and dependent on chipset should often be left disabled, but can be used after installation.
- Due to sector size and block size variation between hard drives and SSDs, benchmarking could be effected, recommended benchmarks include HD bench, ATTO, win bench and IO Meter. Older benchmarks that use HDD optimized sector sizes may show invalid Write test results that vary highly.

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